INCH-POUND
MIL-R-83726/12D(USAF)
27 March 1995
SUPERSEDING
MIL-R-83726/12C(USAF)
9 August 1991

MILITARY SPECIFICATION SHEET

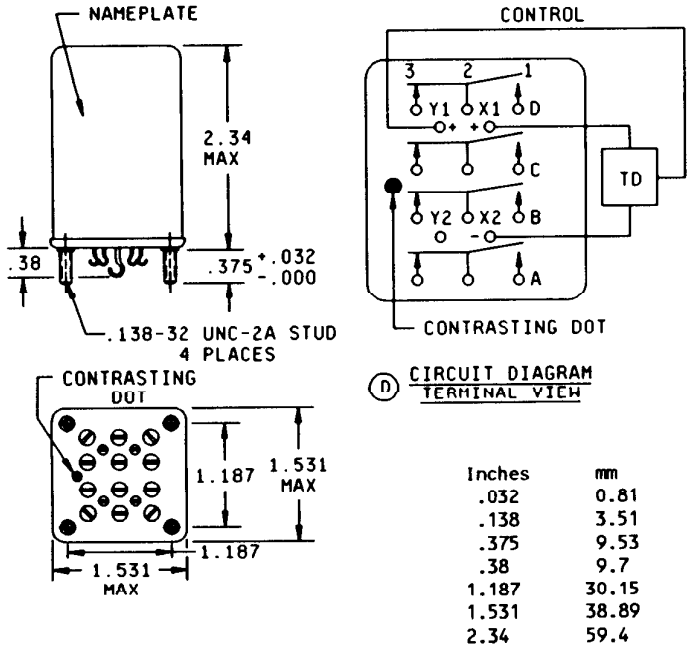
RELAYS, HYBRID, TIME DELAY (ON RELEASE), TYPE IIA, CLASS B, 10 AMPERES, 4PDT, HERMETICALLY SEALED, FIXED TIME, 0.100 TO 300 SECONDS

(D)

INACTIVE FOR NEW DESIGN AFTER 10 JANUARY 1994.
REFER TO MIL-R-83726/29 FOR NEW DESIGNS.

This specification is approved for use by the Department of the Air Force, and is available for use by all Departments and Agencies of the Department of Defense.

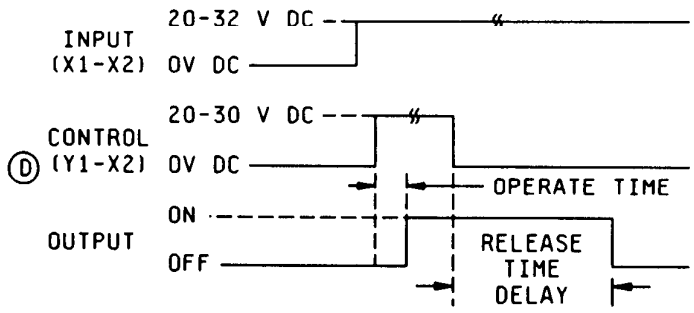
The requirements for acquiring the product described herein shall consist of this specification sheet and the issue of the following specification listed in that issue of the Department of Defense Index of Specifications and Standards (DODISS) specified in the solicitation: MIL-R-83726.



Inches	mm
.032	0.81
.138	3.51
.375	9.53
.38	9.7
1.187	30.15
1.531	38.89
2.34	59.4

FIGURE 1. Configuration and dimensions.

(D) denotes changes



TIMING DIAGRAM

NOTES:
1. Dimensions are in inches.
2. Unless otherwise specified, tolerances are ±.010 (0.25 mm) for three place decimals and ±.03 (0.8 mm) for two place decimals.
3. Metric equivalents are given for general information only.
4. Terminal numbers shall not appear on the relay header. There shall be affixed to the relay a permanent legible schematic diagram that identifies each terminal location specified.

FIGURE 1. Configuration and dimensions - Continued.

TABLE I. Dash numbers and time delay characteristics. 1/ 2/

Dash number	Time delay (seconds) ±10%	Dash number	Time delay (seconds) ±10%	Dash number	Time delay (seconds) ±10%	Dash number	Time delay (seconds) ±10%
		-1202	12	-6502	65	-1703	170
-1000	.100	-1402	14	-7002	70	-1803	180
-5000	3/ .500	-1602	16	-7502	75	-1903	190
-7500	.750	-1802	18	-8002	80	-2003	200
-1001	1	-2002	20	-8502	85	-2103	210
-2001	2	-2202	22	-9002	90	-2203	220
-3001	3	-2502	25	-9502	95	-2303	230
-4001	4	-3002	30	-1003	100	-2403	240
-5001	5	-3502	35	-1103	110	-2503	250
-6001	6	-4002	40	-1203	120	-2603	260
-7001	7	-4502	45	-1303	130	-2703	270
-8001	8	-5002	50	-1403	140	-2803	280
-9001	9	-5502	55	-1503	150	-2903	290
-1002	10	-6002	60	-1603	160	-3003	300

1/ Additional time delay relays within the .100 to 300 second delay range are available. To establish Part or Identifying Numbers (PIN's) not listed in table I (see "PIN" herein).
2/ A suffix letter (W, X, or Y) to designate quality level shall be added to the dash number (see "PIN" herein).
3/ Add ±10 milliseconds to ±10 percent tolerance.

REQUIREMENTS:

Contact data:

Configuration: 4PDT.

Life/load ratings (relay case grounded):

Type of load	Life (cycles)	28 V dc	Amperes 115/200 1 and 3 phase 400 Hz
Resistive	100,000	10	10
Inductive	20,000	8	8
Motor	100,000	4	4
Lamp	100,000	2	2
Reduced current resistive	400,000	2.5	2.5

Contact voltage drop:

Initial: 0.150 volt.

After life tests: 0.175 volt.

(D) Intermediate current: Applicable in accordance with MIL-R-83536.

Contact bounce: 1 millisecond maximum.

Overload:

(D) DC: 40 amperes.

AC: 60 amperes.

Rupture:

DC: 50 amperes.

AC: 80 amperes.

Input data:

Duty rating: Continuous.

Maximum voltage: 30 V dc.

Nominal voltage (over temperature range): 28 V dc.

Minimum voltage: 20 V dc.

Minimum voltage high temperature test: 21 V dc.

Minimum voltage continuous current test: 23.5 V dc.

Maximum current at 25°C: 0.150 ampere.

Release time delay: See table I.

Control current: 20 milliamperes maximum.

Recycle time: 50 milliseconds maximum.

Control pulse duration: 50 milliseconds minimum.

Operate time: 50 milliseconds maximum.

Electrical data:

Insulation resistance at 500 V dc: 1/

Initial: 1,000 megohms minimum.

After life or environmental tests: 500 megohms minimum.

Dielectric strength (sea level):

	Initial	After life tests
Input (X1 - X2 - Y1) 1/	1,000 V rms	1,000 V rms
All other points	1,250 V rms	1,000 V rms

Dielectric strength (altitude): 80,000 feet. 1/

Input (X1 - X2 - Y1): 350 V rms. 1/

All other points: 350 V rms.

Transients:

Transient voltage limits (input):

Surge positive: 80 V dc maximum. 2/

Power loss: 500 microseconds maximum.

Spike:

Self generated: ±50 V maximum.

Susceptibility: ±600 V maximum. 3/

Environmental data:

Temperature range (operating): -55°C to +85°C.

Maximum altitude rating: 80,000 feet.

Shock g-level: 100 g's, 1/2 sine, 3 axes.

Duration: 6 ±1 milliseconds.

Maximum duration contact opening: 10 microseconds.

1/ Input terminals X1, X2, and Y1 shall be connected together during this test.
2/ In accordance with MIL-STD-704, figure 9, limit 1, duty cycle 2 percent.
3/ In accordance with MIL-STD-704, figure 17, 0 to 500 microseconds, duty cycle 2 percent.

Vibration (sinusoidal):

G-level: 20 g's.

Frequency range: 10 Hz to 3,000 Hz.

Vibration (random): Applicable in accordance with MIL-STD-202, method 214, test condition 1B.

Power spectral density: 0.4 g^2/Hz.

Frequency range: 50 Hz to 2,000 Hz.

Duration: 15 minutes each plane.

Acceleration: 20 g's in any axis.

Seal: Not applicable.

Humidity: 95 percent relative humidity.

Physical data:

Configuration and dimensions: See figure 1.

Terminations: Solder hook.

Terminal strength: 3 ±0.5 pounds pull.

Weight: 10 ounces (280 grams) maximum.

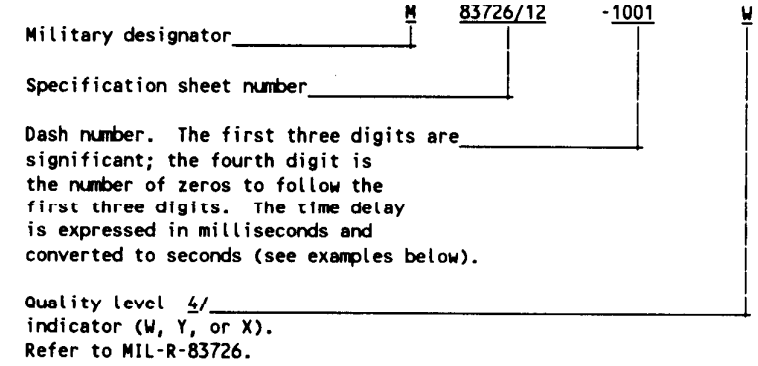
Marking: In accordance with MIL-R-83726. In addition, relays shall be marked with the ESDS identifier as specified in MIL-STD-1285.

ESDS protection program: An ESD protection program shall be implemendted within 6 months of the date of revision C to this document. The manufacturer shall establish and maintain an ESD control program in accordance with MIL-STD-1686 for mission critical equipment. Evidence of such compliance shall be verified by the qualifying activity of this specification as a prerequisite for qualification and continued qualification. This program shall be documented by an ESD control plan which must be under document control. As a minimum, this plan must address the identification of ESDS sub-components and end items, facilities, training, design protection, handling procedures, marking, cleaning, preservation, packaging, and quality assurance. A model ESD control program is available from the qualifying activity and may be used as a guideline. Further guidance for ESD control is available from the EOS/ESD Association and the Electronics Industry Association (EIA). This requirement is applicable to all manufacturers who handle ESDS component parts and materials in the relay manufacturing or testing process. This requirement is not limited to manufacturers qualifying ESDS end items.

ESDS verification: As a part of qualification or qualification after redesign, ESD testing shall be done in accordance with method 3015 of MIL-STD-883 modified to test at 16,000 volts. Testing at lower voltage levels is not required. This testing shall be accomplished as part of the group III for qualification inspection.

ESDS preservation and packaging: Relays shall be preserved and packaged in such a manner as to ensure that the integrity of ESD sensitive relays is not diminished. ESD sensitive relays shall be preserved and packaged in accordance with the requirements of MIL-STD-1686.

PIN: The PIN shall consist of the prefix M83726/12-, a four-digit dash number (expressed in milliseconds), and a quality level indicator in the following format:



EXAMPLES: M83726/12-1000W - 100 millisecond time delay, W level
M83726/12-1001X - 1 second time delay, X level
M83726/12-3003Y - 300 second time delay, Y level

(D) Quality assurance provisions: Group B and group C testing are not required. The manufacturer shall notify the qualifying activity in the event of any design or construction changes, and shall impose additional testing requirements as necessary.

(D) The Qualified Products List (QPL) associated with this inactive for new design specification will be maintained until aquisition of the product is no longer required, whereupon the specification and the QPL will be canceled.

4/ Any relays numbered prior to the date of this specification without a quality level indicator shall be considered interchangeable (store and issue) with the "W" quality level.

CONCLUDING MATERIAL

Custodian:
Air Force - 85

Review activities:
Air Force - 99
DLA - ES

Preparing activity:
Air Force - 85

Agent:
DLA - ES

(Project 5945-F766)